

CLAIMS

1. Method to determine the position of a dental implant (2)
5 which is fixed in the bone of the jaw (13) of a person, whereby an image is formed of the jaw or of a reproduction model of this jaw by means of X-rays or magnetic resonance, which jaw is provided with the implant (2), **characterised in that** at least one marker element (3) is provided on said implant (2) which produces a strong contrast in imaging techniques, whereby the position of the marker element
10 (3) in relation to the jaw is determined on the basis of the image which is formed with said X-rays or via said magnetic resonance, and whereby the position of said implant (2) is then derived from the observed position of the marker element (3).
2. Method according to claim 1, characterised in that a support (4) with said marker element (3), preferably made of a material which is transparent
15 to X-rays, is fixed to said implant (2) in a detachable manner.
3. Method according to claim 2, characterised in that said support (4) with the marker element (3) is fixed to the free end (1) of said implant (2), such that this support (4) extends in the prolongation of the implant (2) and the marker element (3) is situated at a certain distance (d) from this free end (1).
- 20 4. Method according to claim 3, characterised in that, for an implant (2) with a central axis (10), the orientation and position of this central axis (10) is determined by means of a straight line through a centre point of said marker element (3) which is parallel to a longitudinal side (14) of the formed image of said support (4).
- 25 5. Method according to claim 3, characterised in that the orientation and position of the central axis (10) of the implant (2) is defined by determining the centre of gravity of the pixels of the latter, or of said support (4), as well as the centre of gravity of the image of said marker element (3), whereby these centres of gravity are then mutually connected by means of a straight line.

6. Method according to any one of claims 3 to 5, characterised in that on the basis of the orientation and the position of the axis (10) of the implant (2) and the previously determined distance (d) between said marker element (3) and said free end (1) of the implant (2), the position of the implant (2) in relation to the jaw is determined.

7. Method according to any one of claims 1 to 6, characterised in that a second marker element (6) is fixed in relation to the implant (2), with a centre point which is not situated on the central axis (10) of said implant (2), whereby, on the basis of the observed position of this second marker element (6), the angular position of the implant (2) in relation to its central axis (10) is determined.

8. Method according to any one of claims 1 to 7, characterised in that use is made of a spherical marker element (3, 6).

9. Method according to any one of claims 1 to 8, characterised in that use is made of a marker element (3,6) which contains at least tantalum, platinum or tungsten.

10. Method according to any one of claims 1 to 9, characterised in that said image is formed by means of computer tomography.

11. Marker element to apply the method according to any one of the preceding claims, more particularly to determine the position of an implant (2) which is fixed to the jaw (13) of a person, in relation to this jaw (13), whereby an image is formed of the jaw (13) or of a reproduction model of this jaw (13) with the implant (2) by means of X-rays or magnetic resonance, **characterised in that** this marker element (3,6) comprises at least a substance which produces a strong contrast in said image compared to the implant (2) itself.

12. Marker element according to claim 11, characterised in that it contains at least one of the metals from the group formed of tantalum, platinum and tungsten.

13. Marker element according to claim 11 or 12, characterised in that it is part of a support (4) which has means (11) to be fixed to said implant (2) in a detachable manner.

14. Marker element according to any one of claims 11 to 13, characterised in that said support (4) is mainly formed of a material which is transparent to X-rays.

5 15. Support with a marker element (3,6) for determining the position of a dental implant (2) which is fixed to the jaw (13) of a person, in relation to this jaw (13), more particularly for applying the method according to any one of claims 1 to 10, **characterised in that** said marker element (3,6) produces a strong contrast in said image compared to said implant (2) itself.

10 16. Support according to claim 15, characterised in that it comprises a sleeve (5) with a protrusion (15) whose dimensions correspond practically to those of a recess (8) provided in the head (1) of the implant (2) on which this support must be fixed, such that said protrusion (15) can be placed in a practically fitting manner in said recess (8).